

CURRICULUM VITAE

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Professional Experience:

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| 2000-present | Director of Research, Charm Sciences Inc, Lawrence, MA |
| 1990 -1999 | Manager of Research, Charm Sciences, Inc., Malden, MA |
| 1985 - 1990 | Post-doctoral fellow, University of Massachusetts, Boston |
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Publications:

1. Saul SJ: The Metabolism of Sesamol by Rat Liver Microsomes and the Role of Cytochrome b5 and the Mixed Function Oxidase System in Sesamol Metabolism. Ph.D. Dissertation, University of Rhode Island, (1983).
2. Sugumaran M, Saul SJ, and Ramesh N: Endogenous Protease Inhibitors Prevent Undesired Activation of Prophenolase in Insect Hemolymph. Biochem. Biophys. Res. Commun. 2, 1124-1129 (1985).
3. Saul SJ and Sugumaran M: Protease Inhibitor Controls Prophenoloxidase Activation in *Manduca sexta*. FEBS Lett. 208, 113-116 (1986).
4. Saul SJ and Sugumaran M: Protease Mediated Prophenoloxidase Activation in the Hemolymph of the Tobacco Hornworm, *Manduca sexta*. Arch. Insect Biochem. Physiol. 5, 1-11 (1987).
5. Saul SJ, Bin L, and Sugumaran M: The Majority of Prophenoloxidase in the Hemolymph of *Manduca sexta* is present in the Plasma but not in the Hemocytes. Dev. Comp. Immunol. 11, 479-485 (1987).
6. Saul SJ and Sugumaran M: Prophenoloxidase Activation in the Hemolymph of *Sarcophaga bullata* Larvae. Arch. Insect Biochem. Physiol. 7, 91-103 (1988).
7. Saul SJ and Sugumaran M: A Novel Quinone: Quinone Methide Isomerase Generates Quinone Methides in Insect Cuticle. FEBS Lett. 237, 155-158 (1988).
8. Sugumaran M, Saul SJ, and Semensi V: On the Mechanism of Formation of N-Acetyldopamine Quinone Methide in Insect Cuticle. Arch. Insect Biochem. Physiol. 9, 269 -281 (1988).
9. Sugumaran M, Semensi V, and Saul SJ: On the Oxidation of 3,4-Dihydroxyphenethyl Alcohol and 3,4-dihydroxyphenylGlycol by Cuticular Enzyme (s) from *Sarcophaga bullata*. Arch. Insect Biochem. Physiology. 10, 13-27 (1989).

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10. Saul SJ and Sugumaran M: Characterization of a New Enzyme System that Desaturates the Side Chain of N-acetyldopamine. FEBS Lett. 251, 69-73 (1989).
11. Saul SJ and Sugumaran M: o-Quinone/Quinone Methide Isomerase: A Novel Enzyme Preventing the Destruction of Self-Matter by Phenoloxidase-Generated Quinones During Immune Response in Insects. FEBS Lett. 249, 155-158 (1989).
12. Sugumaran M, Saul SJ, and Semensi V: Trapping of Transiently Formed Quinone Methide During Enzymatic Conversion of N-acetyldopamine to N-acetylnorepinephrine. FEBS Lett. 252, 135-138 (1989).
13. Saul SJ and Sugumaran M: N-acetyldopamine Quinone Methide/l, 2-dehydro-N-acetyl Dopamine Tautomerase. FEBS Lett. 255, 340-344 (1989).
14. Sugumaran M., Semensi V. Dali H, and Saul SJ: Nonenzymatic Transformations of Enzymatically Generated N-acetyldopamine Quinone and Isomeric Dihydrocaffeoyl Methyl Amide Quinone. FEBS Lett. 255, 345-349 (1989).
15. Saul SJ and Sugumaran M: Characterization of Quinone Tautomerase Activity in the Hemolymph of *Sarcophaga bullata* Larvae. Arch. Insect Biochem. Physiol. 12, 157-172 (1989).
16. Saul SJ and Sugumaran M: 4-Alkyl-o-quinone/ 2-hydroxy-12-quinone Methide Isomerase From the Larval Hemolymph of *Sarcophaga Bullata*. I. Purification and Characterization of Enzyme Catalyzed Reaction. J. Biol. Chem. 265, 16992-16999 (1990)
17. Saul SJ and Sugumaran M: Biosynthesis of Dehydro-N-acetyldopamine by a Soluble Enzyme Preparation from the Larval Cuticle of *Sarcophaga Bullata* Involves Intermediary formation of N-acetyldopamine quinone and N-acetyldopamine quinone methide. Arch. Insect Biochem. Physiol. 15, 237-254 (1990)
18. Sugumaran M, Saul SJ and Dali H: On the Mechanism of Side Chain Oxidation N-alanyldopamine by cuticular quinone isomerase from *Sarcophaga bullata*. Arch. Insect Biochem. Physiol. 15, 255-269 (1990)
19. Saul, SJ and Sugumaran M: Quinone Methide as a reactive Intermediate formed during the Biosynthesis of Papiliochrome-II, a Yellow Wing Pigment of Papilionid Butterflies. FEBS Letter. 279, 145-148, (1990)
20. Saul, SJ, Dali, H and Sugumaran, M: Quinone and Quinone Methide as Transient Intermediates Involved in the Side Chain Hydrolyzation of N-acetyldopamine Derivatives by Soluble Enzymes from *Manduca Sexta* Cuticle. Archives Insect Biochem. And Physiol. 16, 123-136, (1991).
21. Sugumaran, M, Giglio, L, Kundzicz, H, Saul, S, and Semensi, V. Studies on the Enzymes Involved in Puparial Cuticle Sclerotization in *Dosophila Melanogaster*. Archives Insect Biochem and Physiol 19(4). 271-283.(1992)
22. Zomer, E, Saul S and Charm SE: HPLC Receptorgram. A Method for Confirmation and Identification of Antimicrobial Drugs by Using Liquid Chromatography with Microbial Receptor Assay. I. Sulfonamides in Milk. J. AOAC International. 75, 987-993,(1992).
23. Zomer, E, Quintana, J, Saul, S and Charm, SE: LC-Receptorgram. A Method for Identification and Quantitation of β -lactams in Milk by Liquid Chromatography with Microbial Receptor Assay. J. AOAC International, 78, 1165-1172, (1995)

24. Zomer, E. Quintana, J. Scheemaker, J. Saul, S and Charm, SE: HPLC-Receptorgram. A Comprehensive Method for Identification of Veterinary Drugs and Their Active Metabolites. American Chemical Society, Symposium on Veterinary Drug residues in Foods. 269th National Meeting, 149-160, (1996).
25. Saul, SJ. Zomer, Z. Puopolo, D and Charm SE: Use of a New Bioluminescence Method for Screening Organophosphate and N-methylcarbamate Insecticides in Processed Baby Foods. J. Food Protection 59, 306-311. (1996).
26. Saul, S. Boyer, C. Markovsky, B. Salter, R. Lawton-Scheemaker, J. and Charm S. The New Charm SL (Safe Level) β -lactam Test Significantly Reduces Rejection of Milk Positive by Other Screening Methods. National Mastitis Council ; 1999 Annual Meeting Proceedings.
27. Salter, R. Legg, D. Ossana, N. Boyer, C. Scheemaker, J. Markovsky, R. and Saul, SJ: Charm Safe-Level β -Lactam Test for Amoxicillin, Ampicillin, Cefotiofur, Cephapirin, and Penicillin G in Raw Commingled Milk. J. AOAC International, 84, 29-36. (2001)
28. Quintana-Rizzo, J. Salter, R. Saul, S. Confirmation of AMphenicols in Honey using HPLC-Receptorgram. Apiacta, 38, 218-225. (2003)

Abstracts:

1. Saul SJ and Sugumaran M: Phenoloxidase activation, proteases and protease inhibitors in insect Hemolymph. Fed. Proc. Fed. Amer. Soc. Exptl. Biol. 44, 1860 (1986)
2. Saul SJ and Sugumaran M: Activation of two different phenoloxidases in the hemolymph of *Sarcophaga bullata* larvae in response to zymosan treatment. Proc. XVIII Int. Congr. Entomol. p. 143 (1988)
3. Sugumaran M., Rivera T, Semensi V and Saul SJ: Characterization of quinone methide generating cuticular phenoloxidase from *Manduca sexta* larvae. Proc. X-VIII Int. Congr. Entomol. p. 145 (1988)
4. Saul, SJ. Zomer, E and Charm SE: Charm Pesticide Test: Rapid Screening Method for the Detection of Organophosphate and Carbamate Pesticides for Water, Dairy Products, Fruits, Vegetables and Other Food Products. IAMFES. 80th Annual Meeting . 17-18, (1993)

Patents:

1. Zomer, E. Saul, S. and Charm, SE: Bioluminescence Method for the Determination of Pesticides. US Patent Number: 5,283,180. (1994)
2. Zomer, E. Saul, S. and Charm, SE: Method of Preparing D-Luciferin Derivatives, US Patent Number 5,374,534. (1994)
3. Zomer, E. Saul, S. and Charm, SE: Test kit for Determination of Organophosphate and Carbamate with Insect Brain Material That Hydrolyses a 6-Substituted D-Luciferin Ester. US Patent Number 5,374,535. (1994)
4. Charm, SE. Skiffington, R. Markovsky, RJ. Zomer, E. and Saul SJ: Test Device for Detection of an Analyte. US patent Number 5,985,675. (1999) (note: see certificate of correction)
5. Markovsky, RJ. Boyer, CA. Charm SE. Donahue, PR. Glickman, YA, Saul, SJ. Scheemaker, JL. Skiffington, RT. Trivedi, ST and Zomer, E. Test Device for Detecting the Presence of a Residue Analyte in a Sample. US Patent Number 6,319,466. (2001)

6. Charm SE, Skiffington, R, Markovsky RJ, Zomer E. and Saul, SJ: Method for Detection of an Analyte. US Patent Number 6,475,805. (2002)
7. Zomer, E, Saul, S and Charm, SE; Test Kit and Method for the Determination of Pesticides. EP Patent Number 0576667. (2001)